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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,403	07/01/2005	Raymond Joseph Elisabeth Habets	NL 030034	6647

24737 7590 09/21/2007

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
RICE, ELISA M	

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
09/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,403	HABETS ET AL.	
	Examiner	Art Unit	
	Elisa M. Rice	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/1/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 5,765,561) and Heron et al (US 6,690,393)

Regarding claim 1, Chen discloses a method of displaying of a medical image, the method comprising the steps of:

rendering of three dimensional volume data on a display unit (Chen, column 7, lines 38-56),

selection of a picture element (Chen, column 13, line 20-23),

scaling the size of a symbol based on the distance (Chen, Fig. 9, num 25),

displaying or printing of the scaled symbol at or in the proximity of the selected picture element (Chen, column 13, lines 33-36).

Chen does not disclose determining a signed distance of a volume element corresponding to the picture element from a reference plane.

Heron teaches determining a signed distance of a volume element corresponding to the volume element from a reference plane (Heron, paragraph 15). The distance of the label, or symbol, from the viewpoint, or reference plane, is a signed distance. In general, when a voxel and its associated pixel is positioned on a side of the viewpoint, the potential value is negatively signed and when positioned on an opposite side of the viewpoint, the value is positively signed. Therefore, since the pixel corresponding to the label is positioned on one side of the viewpoint, it can be considered to be signed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use Heron's 3D environment labeling method which uses label distances from the viewpoint to provide the means for scaling of the planning markers of Chen's video based surgical targeting system because as stated by Heron in paragraph 3 this "provides the user with a two dimensional view such that the user sees a representation of the three dimensional virtual environment as though from a particular viewpoint" ("some sort of visible differerence may be provided for near and far labels", Heron, paragraph 15).

Regarding claim 3, while the combination of Chen and Heron discloses the method of claim 1, the combination of Chen and Heron do not teach further comprising determining a shortest distance and a largest distance of the displayed picture elements from the reference plane to provide a scale for scaling of the size.

Heron teaches determining a shortest distance and a largest distance of the displayed picture elements from the reference plane to provide a scale for scaling of the size (Heron, paragraph 15 and 16). Determining a shortest distance and a largest distance of the picture elements from the reference point is inherently taught by Heron because the difference between these two points is the basis for obtain a scale and associated scaling parameters.

It would have been obvious to one of ordinary skill in the art to modify the invention of Chen and Heron to include a linear scaling parameter because as stated by Heron in paragraph 16 it "may be employed in determining the size of a generated label with that object."

Regarding claim 4, the combination of Chen and Heron discloses the method of claim 1, further comprising the steps of: changing a view for rendering of the three dimensional image data (Chen, column 2, lines 59-67), determining of a second signed distance of the volume element corresponding to the selected picture element from the reference plane (the combination presented in claim was able to determine a second distance from the reference plane), rescaling of the size of the symbol based on the second distance (Chen, Fig. 9, num 25), displaying or printing of the rescaled symbol at or in the proximity of the picture element (Chen, column 13, lines 33-36).

Regarding claim 5, Chen discloses the computer program product, in particular digital storage medium, comprising computer program means (Chen, column 7, lines 38-42) for performing the steps of:

means for rendering of three dimensional image data on a display unit (Chen, column 7, lines 38-56);

means for selection of a picture element (Chen, column 13, line 20-23),

means for scaling the size of a symbol based on the distance (Chen, Fig. 9, num 25),

means for displaying or printing of the scaled symbol at or in the proximity of the selected picture element (Chen, column 13, lines 33-36).

Chen does not disclose means for determining a signed distance of a volume element corresponding to the picture element from a reference plane.

Heron teaches determining a signed distance of a volume element corresponding to the volume element from a reference plane (Heron, paragraph 15). The distance of the label, or symbol, from the viewpoint, or reference plane, is a signed distance. In general, when a voxel and its associated pixel is positioned on a side of the viewpoint, the potential value is negatively signed and when positioned on an opposite side of the viewpoint, the value is positively signed. Therefore, since the pixel corresponding to the label is positioned on one side of the viewpoint, it can be considered to be signed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use Heron's 3D environment labeling method which uses label distances

from the viewpoint to provide the means for scaling of the planning markers of Chen's video based surgical targeting system because as stated by Heron in paragraph 3 this "provides the user with a two dimensional view such that the user sees a representation of the three dimensional virtual environment as though from a particular viewpoint" ("some sort of visible differerence may be provided for near and far labels", Heron, paragraph 15).

Regarding claim 6, Chen discloses the computer system (Chen, Fig. 1, num 15) for processing of medical image data comprising:

selection of a picture element (Chen, column 13, line 20-23),

scaling the size of a symbol based on the distance (Chen, Fig. 9, num 25),

displaying or printing of the scaled symbol at or in the proximity of the selected picture element (Chen, column 13, lines 33-36).

Chen does not disclose determining a signed distance of a volume element corresponding to the picture element from a reference plane.

Heron teaches determining a signed distance of a volume element corresponding to the volume element from a reference plane (Heron, paragraph 15). The distance of the label, or symbol, from the viewpoint, or reference plane, is a signed distance. In general, when a voxel and its associated pixel is positioned on a side of the viewpoint, the potential value is negatively signed and when positioned on an opposite side of the

viewpoint, the value is positively signed. Therefore, since the pixel corresponding to the label is positioned on one side of the viewpoint, it can be considered to be signed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use Heron's 3D environment labeling method which uses label distances from the viewpoint to provide the means for scaling of the planning markers of Chen's video based surgical targeting system because as stated by Heron in paragraph 3 this "provides the user with a two dimensional view such that the user sees a representation of the three dimensional virtual environment as though from a particular viewpoint" ("some sort of visible differerence may be provided for near and far labels", Heron, paragraph 15).

Regarding claim 7,while the combination of Chen and Heron discloses the computer system of claim 6, the combination of Chen and Heron does not disclose further comprising means for determining a shortest distance and a largest distance of the displayed picture elements from the reference plane to provide a scale for scaling of the size.

Heron teaches determining a shortest distance and a largest distance of the displayed picture elements from the reference plane to provide a scale for scaling of the size (Heron, paragraph 15 and 16). Determining a shortest distance and a largest distance of the picture elements from the reference point is inherently taught by Heron

because the difference between these two points is the basis for obtain a scale and associated scaling parameters.

It would have been obvious to one of ordinary skill in the art to modify the invention of Chen and Heron to include a linear scaling parameter because as stated by Heron in paragraph 16 it "may be employed in determining the size of a generated label with that object."

Regarding claim 8, the combination of Chen and Heron discloses the computer system of claim 6 further comprising: means for changing a view for rendering of the three dimensional image data (Chen, column 2, lines 59-67), means for determining of a second distance of the volume element corresponding to the selected picture element from the reference plane (the combination presented in claim was able to determine a second distance from the reference plane), means for rescaling of the size of the symbol based on the second distance (Chen, Fig. 9, num 25).

Regarding claim 9, Chen discloses the medical imaging system comprising:

means for three dimensional medical image data acquisition (Fig. 1, num. 30);

means for rendering of three dimensional image data on a display unit (Chen, column 7, lines 38-56);

means for selection of a picture element (Chen, column 13, line 20-23),

means for scaling the size of a symbol based on the distance (Chen, Fig. 9, num 25),

means for displaying or printing of the scaled symbol at or in the proximity of the selected picture element (Chen, column 13, lines 33-36).

Chen does not disclose means for determining a signed distance of a volume element corresponding to the picture element from a reference plane.

Heron teaches determining a signed distance of a volume element corresponding to the volume element from a reference plane (Heron, paragraph 15). The distance of the label, or symbol, from the viewpoint, or reference plane, is a signed distance. In general, when a voxel and its associated pixel is positioned on a side of the viewpoint, the potential value is negatively signed and when positioned on an opposite side of the viewpoint, the value is positively signed. Therefore, since the pixel corresponding to the label is positioned on one side of the viewpoint, it can be considered to be signed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use Heron's 3D environment labeling method which uses label distances from the viewpoint to provide the means for scaling of the planning markers of Chen's video based surgical targeting system because as stated by Heron in paragraph 3 this "provides the user with a two dimensional view such that the user sees a representation of the three dimensional virtual environment as though from a particular viewpoint" ("some sort of visible differerence may be provided for near and far labels", Heron, paragraph 15).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Chen et al. (US 5,765,561) and Heron et al (US 6,690,393), futher in view of Kaasila (US 7,222,306).

Regarding claim 2, while the combination of Chen and Heron discloses the method of claim 1, the combination of Chen and Heron does not disclose whereby a minimum symbol size is defined which limits the reduction of the size of the symbol.

Kaasila teaches a method whereby a minimum symbol size is defined which limits the reduction of the size of the symbol, or specifically the label including text data, ("limit minimum font size, indicating that no fonts should be shown on the thin client's display below a certain pixel size," Kaasila, column 83, lines 5-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of the invention of Chen and Heron to set a minimum symbol size because as stated by Kaasila will be set to prevent the display of text that is too small to read (Kaasila, column 83, lines 5-15).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elisa M. Rice whose telephone number is (571)270-1582. The examiner can normally be reached on 8:00a.m.-5:30p.m. EST Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on (571)272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Elisa Rice ER 9/17/2007
Assistant Patent Examiner
2624

EMR

BRIAN WERNER
SUPERVISORY PATENT EXAMINER